

Relationship between amniotomy and rate of cesarean section: a cohort study.

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Abstract

Although amniotomy is becoming more popular, however in practice, its recommendation requires special attention, and its indication should be clear. This research aims at studying the impact of amniotomy on rate of cesarean section. This research paper is based on the results of an analytical cohort study which carried out at Kosar hospital, Qazvin (Iran) 2008-2009. The population under study consisted of all admitted women (n=305) whose labor was induced by amniotomy. The patients were further divided into two groups including exposure group (n=174) and unexposure group (n=131) based on being in early phase and active phase, respectively. The statistical analysis was performed over the obtained data using t-test, chi-square. Cesarean section was significantly higher, (p=0/001) in the exposure group than in the unexposure group i.e. 19 (10/9%) vs. 2 (1/5%). It is observed that Non-progressive labor during the first stage of labor is considerably higher in the exposure group (p=0/001). Also non-progressive labor during the second stage was (2/9%) in the exposure group and (1/5%) in the unexposure group that revealed no significant difference. Oxytocin prescription in the exposure group was (43/7%) while in the unexposure group it was (4/6%) revealing a statistically significant difference (p=0/000). Non-progressive labor during the first stage and oxytocin prescription were all higher in the early phase group than in the active phase group. It seems that early amniotomy may increase the need for cesarean section.

Keywords: Premature rupture of fetal membrane, Cesarean section, Labor, Cohort study.

Accepted on September 19, 2016

Introduction

Cesarean section (C/S) is defined as the delivery of the fetus via laparotomy and hysterotomy [1]. C/S has an important role in reducing maternal and peripartum mortality rate. At first, the primary goal was maternal lifesaving in limited deliveries, but its applications were expanded during recent years and now it covers a wide range of more severe dangers for both mother and fetus [2,3]. Undoubtedly, one of the important justifications for such an increase (due to complications of C/S) is the available anxieties about fetus safety around the time of delivery in women with a history of C/S [1]. A review of cesarean operation in the world shows that C/S rate has increased during the past 20 years and approximately 18.5 million C/Ss are performed yearly worldwide. 73% (13.5 millions) of the total number of C/Ss are performed in the 69 countries with C/S rates >15% where 37.5% (48.4 millions) of the total number of births occur. C/S global rate has been 21.2% in 1984, 25% in 1987, and over 30% in 1995, while the acceptable global rate is 15%. The statistical reports of Iran reveal a high rate of C/S (41.9%) [4]. According to a study conducted in Qazvin in 1996, this figure was 26.8% [5]. Various other studies show that maternal mortality rate related

to C/S has been 4 to 8 in 10000. According to some other studies, mortality risk in C/S is 26 times more than that of the vaginal delivery [3]. The inappropriate use of C/S will increase the cost of health care compared to vaginal delivery [6-13]. Recently, the high rate of C/S in our country has attracted the attention of health experts. The ministry of health, treatment and medical education is concerned about this issue and it is required some studies to be conducted about the factors which have resulted to such an increase in the rate of C/S. One of the influential factors in such of increase is amniotomy [14].

Amniotomy or artificial rupture of membranes is usually implemented to induce and support the delivery process, internal electronic fetal heart monitoring, intrauterine recording of contractions, meconium detection, and uterine dysfunction. On the other hand, its drawbacks are chorioamnionitis, umbilical cord prolapse, a severe urgency to terminate pregnancy, abnormal patterns of fetal heart rate due to cord compression, and fetal distress. The main disadvantage of amniotomy when it is used for induction is that the time required for initiation of contractions is unpredictable and sometimes might be quite long [1]. Releasing amniotic fluid shortens muscular fibers and increases the force and duration